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AN ANALYSIS OF INTERNAL EFFICIENCY IN PRIMARY SCHOOL EDUCATION IN WESTERN EQUATORIA STATE OF SOUTH SUDAN BETWEEN 2009 AND 2013

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ABSTRACT

The purpose of this study was to analyse progress made towards attainment of universal primary school education in Western Equatoria State (WES) of South Sudan within the scope of participation and internal efficiency. The descriptive research survey design was used to capture data from EMIS that was used in the cohort analysis tool to determine progress between 2009 and 2013 and how much of the resources were wasted in this period. It was found that dropout rate and repetition were high in Western Equatoria State (WES), in addition, girls dropout and repeat more than boys in the state between 2009/2010 and 2012/2013. The WE primary education system was only 14 % and 17 % efficient in 2009 and 2012 respectively. Wastage ratio was high in both cases graduate were being produced at six and seven percent times the ideal cost at the primary school level in 2009 and 2012 accordingly. Wastage due to dropout accounted for by 85 and 88 percent in 2009 and 2012 respectively. The Survival rates in 2012/2013 were higher than that of 2009/2010 but decrease with increase in grade level. In 2012/2013, only 12 percent of the managed to survive to the last grade (P8). Of the 58 percent that enrolled in 2012, only nine percent completed primary education level. An improvement of 12.5 per cent in CR was registered.

KEY WORDS: Analysis, Internal Efficiency and Western Equatoria State.

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Original Article

INTRODUCTION

The Government of South Sudan (GoSS) is committed to achieve the Sustainable Development Goal number four, (SDGs) formerly anchored on Universal Primary Education (UPE) and in the Millennium development goal (MDG) 2. According the goal, children everywhere, boys and girls alike were expected to be enrolled in school and expected to the full course they were enrolled in by 2015 (Blanch field and Lawson, 2010; Mehrotra, 2000**;** Al-Samarrai, 2003; UN, 2006; UN, 2010; Saito, 2004; UNESCO, 2000; Nishimura & Ogawa, Sifuna, Chimombo & Kunje, Ampiah, Byamugisha, Sawamura & Yamada, 2009). Several documents reflected the government's commitment to these goals" (Dicho, 2014. p1). This was also reflected in the World Bank report 2012 which showed that primary school enrollments were roughly increased; gross enrolment rate (GER) by 21 percent and 72 percent in 2000 and 2009 respectively. This was an indication of the commitment by the government to educate all children in the republic of South Sudan (World Bank, 2012; MoEST, 2009; MoEST, 2012; MoGEI, 2012a; MoGEI, 2013 MoGEI, 2012 b). However, with the challenges of the civil war that has occupied the better part of the government's agenda, these figures may not be a true reflection on the ground. Many families have fled with their children to the neighbouring countries; Kenya, Uganda, Ethiopia and Sudan.

It is therefore important to find out current trend rates of retention and examine the efficiency of the primary education system. Dicho (2014) found out that Western Equatoria State (WE) showed unique trends in enrolment where both GER and NER dropped in 2010 and gradually increased up to 2013. Though the rates were not among the highest in the country, the attempt by Dicho to explain did not sufficiently give predictive trends. This study is a follow-up of Dicho's (2014) recommendation on further work in this state. The central focus of this study is to find out whether similar trends were followed in retention and internal efficiency of the primary school education cycle in the state between 2009 and 2012. The focus is on the trends in retention, repetition and completion rates based on flow rates in primary school education level. The findings may help to demonstrate the status of the state on its efforts towards the realization of the MDGs and EFA goals by 2022 since it could not achieve the targets set for 2015.

Completion rate (CR) is the number of those pupils who manage to finish a given cycle (graduates as a proportion of the original cohort of 1,000 pupils of the cycle). Completion Rate could be also the total number of new entrants in the system to the population in the final grade of primary school, irrespective of age, (UIS, 2009).

The literature was reviewed on concepts and methodologies in the determination of the internal efficiency in education. However, "improving efficiency has two mutually opposing effects on the desired intake size, that is to say firstly lowering of dropout rates means an increase in intake size, hence added capital and running costs. Decreasing repetition rates may mean decrease in the capacity of intake and a decrease of spending (IIEP, 2014*;* Dicho, 2014). This study was limited by not looking at what happens to the graduates and time and financial resources put into the system.

At the dawn of the twenty-first century it was estimated that more than 37 million children aged 10-14 in SSA would not finish primary cycle (Lloyd & Hewett, 2003). In fact the progress towards the same has been described as disappointing (UNESCO et al, 2013/4). For example, countries labelled as close to target with 97 percent had expected the net intake rate of 60 percent, the survival rate to last grade of 23 percent, and expected cohort completion rate of 13 percent in 2011. Countries termed as far from target with 80-94 percent had a net intake rate of 15 percent, SR to the final grade of 32 percent and estimated cohort CR of 40 percent. Whereas those countries very far from a target with less than 80 percent had an anticipated net intake rate of eight percent, SR to final grade of 26 percent and anticipated cohort CR of 28 percent (UNESCO et al, 2013/4). Kenya, Ethiopia and Ghana are leading in the first group of countries that made tremendous efforts towards the 2015 EFA goals. However, South Sudan was not even mentioned among the second group of the countries towards the 2015 targets.

Generally Completion Rates in SSA have been slow. The rates rose from 46 percent in 1960s to 57 percent in 1990s. This in itself shows very little progress over the last 30 years compared to population increases during the same period (Lloyd & Hewett et al, 2003; Mehrotra, 2000). Most countries' Internal efficiency coefficient (IEC) is between 1.5 and 2.0 (IIEP, 2014).

Statement of the Problem

There is a lack of detailed analysis of internal efficiency trends in Western Equatorial State. This had made it difficult for planners and decision makers to make well informed decisions for the educational development of the state as well as to meet the international and global education targets; EFA, MDGs goal number two (2) and the SDGs goal number four. Children hardly survive to the final grade in a designated course cycle being enrolled. For example, in 2012 at both

national level and Lakes State, less than 10 percent of pupils survived to the final grade. Meanwhile, only five percent and four percent of those who had enrolled completed in 2009 and 2012 at national level respectively (Dicho, 2014). Data for Western Equatoria (WE) was not available for comparison.

Purpose of the Study

The purpose of this paper was to establish the trend in retention and internal efficiency at a primary school education level in Western Equatoria State of South Sudan in 2009/2010 and 2012/2013.

OBJECTIVES

- To establish the trends in transition rates in Western Equatoria State at the primary education level in 2009 and 2012
- To determine the trends in completion rates in Western Equatoria State at the primary education level in 2009 and 2012
- To establish the internal efficient of the primary school education system between 2009 and 2012

Research Questions

- What were the transition rates in 2009 and 2012 in WES?
- What were the completion rates in 2009 and 2012 in WES?
- How efficient was the primary school education system in 2009 and 2012 in West Equitorial State?

METHODOLOGY

Descriptive survey research design was used in the study based on EMIS data. The data collected was used to determine the internal efficiency, survival rates, and completion rates using the cohort analysis tool ((IIEP et al, 2014; UIS et al, 2009; UNESCO, 1970).

Findings

Analysis of flow rates in WES at the Primary Education level between 2009 and 2010 are presented in figure 1

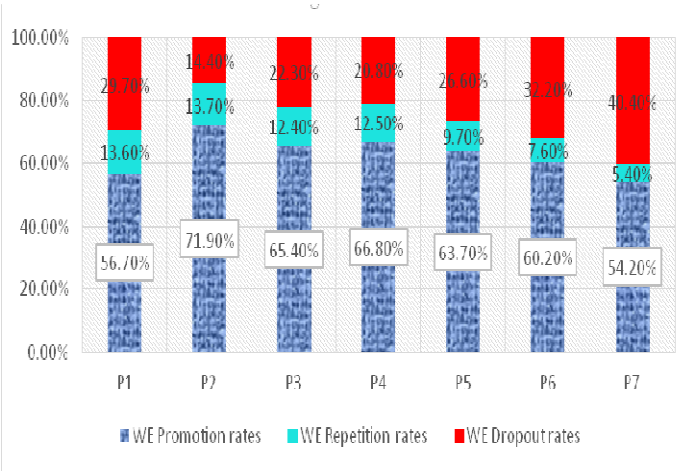


Figure 1: WE Flow Rates in 2009/2010

In this analysis PP, RR, and DR represent the promotion rate, repetition rate and dropout rates respectively**.** As shown in figure 1 PR and RR is highest in P2 (PR is 71.9 percent and RR is 13.7 percent) dropping gradually until P7 (PR 54.2 percent and RR is 5.4 percent). The DR was higher than RR at all levels in the 2009/2010. The trend in DR showed an increase during the period at all the levels from P1 with P7 recording the highest increase of 40.4 percent. The trend for RR showed a decrease from grade P1 to P7 the trend was highest at P2 (13.7%). Thus the RR and PR fluctuated at all the levels. Comparing this to the national level trends, PR was highest at P2 (75.2%) and RR was highest at P2 (13.7 %). These trends seem to contradict each other. It would be expected that when the PR rate is increased, the RR is expected to reduce not both of them following a similar trend as observed in the figure. However, this is explained by the trends in the increases in the DRs. These trends compares favourably with the national figures. The RR and DR in 2009/2010 were only 9.7 percent and 15.1 percent at P2 and 9.1 percent and 29 percent at P7 respectively.

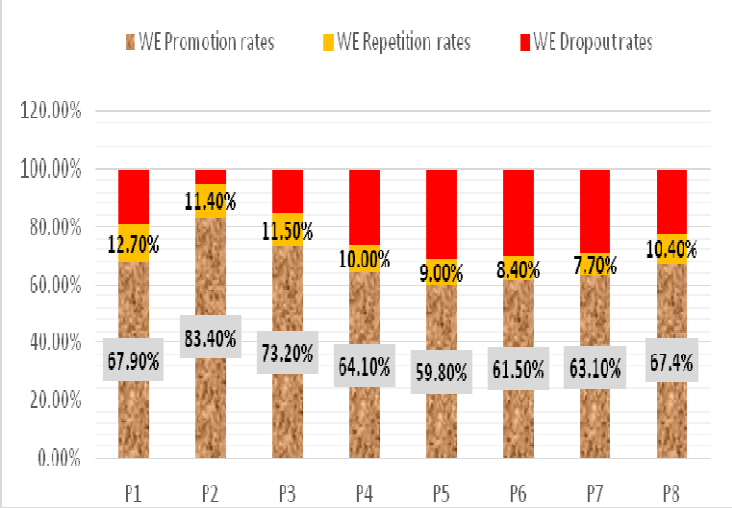


Figure 2: Grade To Grade Flow Rates In 2012/2013

In 2012/2013, PR fluctuated between 60 percent and 83 percent at P5 and P2 respectively as seen in figure 2. Repetition Rate reduced as we move from grade P2 to P7 (11.4 % to 7.7 %, respectively) and then rose to 10.4 percent at P8. On the other hand DR also fluctuated and followed the same pattern as that of the RR. The rate was lowest at P2 (5%) increasing to 22.2 percent at P6 then reduced a bit to 19.4 percent at P8. These fluctuations could be explained due to instability arising from the continuing civil war in the country. Many families leave and come back to the country throughout the year.

The trend in 2012/2013 academic year as compared with those in 2009/2010 does not differ much. Thus there is little improvement in PRs but a remarkable one in DRs and RRs. There was an observed reduction in DR but almost doubled increase in RR. The 2012/2013 trend for PR for WES was almost double that of the national level in the same period, while DR at national level was more than twice as much as that for the WES (56.1 % compared to 22.2 %).

The WES trends for the DR were higher than that of national level being 10.4 percent compared to 6.1 percent at grade P8. A comparison of these flow rates with those of the Lake State region in the same period 2012/2013 shows the results for Lake State were better; the DR and PR were 75 percent and 20 percent respectively as compared to 22.8 percent and 67.4 percent respectively for WES. It is only for RR that the WES had better results.

Internal Efficiency Of The Primary School Education In WE In 2009/2010 And 2012/2013

The effects of the PR, RR and DR on the education system are used to measure by internal efficiency. The values are used to measure the internal efficiency coefficient (IEC). The coefficient values summarize the results of repetitions and dropouts on the educational processes in producing graduates (UIS, 2009).

Western Equitorial State's PR, RR and DRS in primary school education are recorded in figures 3 to 6 and tables 1 to 4. The cohort analysis assumes that a pupil is allowed to repeat twice only, after which he/she either is automatically promoted or drops out of the school. Due to limited spaces, no more children are allowed to join the education system in the middle of the courses until the ones in the system graduate or dropout. The flow rates for the 2009/2010 are presented in table 1.1

Table 1: Western Equatoria State Flow Rates in 2009/2010

	P1	P2	P3	P4	P5	P6	P7
Promotion rates	57%	72%	65%	67%	64%	60%	54%
Repetition rates	14%	14%	12%	13%	10%	8%	5%
Dropout rates	30%	14%	22%	21%	27%	32%	40%

Year	P1		P2		P3		P4		P5		P6		P7			
		297														
2009	1000															
	136	567														
		40		82												
2010	136		567													
	18	77	78	408												
		5		22		91										
2011	18		155		408											
		10	21	111	51	267										
				3		36		55								
2012	0		32		162		267									
				23	20	106	33	178								
						6		29		47						
2013			0		43		139		178							
							17	93	17	113						
						28		15		29		37				
2014					0		45		110		113					
								30	11	70	9	68				
										15		25		28	Graduates	
2015							0		41		79		68		37	
										26	6	47	4			
												13		21		
2016									0		32		51		28	
												19	3			
														10		
2017											0		22		12	
2018													0			
Graduates															77	
Total pupils years in each grade	1154		753		612		451		329		224		142			
Total pupils years	3667															
Students who survived to the next higer grade		655		542		400		301		210		135				
Survival rate		65%		54%		40%		30%		21%		13.5%				

Figure 3: WES Pupil Cohort Flow for 2009/2010 at the Primary Education Level

Table 2: Internal efficiency calculations for WES in 2009/2010 Cohort

Completion rate =77/1000*100%		8%
Ideal Pupils years =7*1000	7000	
Ideal output	1000	
Ideal input/output ratio =7000/1000	8	
Actual pupils years =1154+753+612+451+329+224+142	3667	
Actual number of graduates =37+28+12	77	
Actual input/output ratio =3667/77	48	
Wastage ratio(WR) =48/7	7	
Internal efficiency coefficient (IEC) =1/7	14%	
Average number of years taken by a graduate =(37*8+28*9+12*9)/77		8
Number of wastage due to drop out		2669
Pupils years without wastage = 77* 8	539	
Pupils years wastage = total pupils years -pupil years with out wastage	3128	
Wastage ratio(WR) due to dropout =3365/3844*100%	85%	
Wastage ratio(WR) due to repetition =100%-88%	15%	

Table 3: Western Equatoria State Flow Rates In 2012/2013

	P1	P2	P3	P4	P5	P6	P7	P8
Promotion rates	68%	83%	73%	64%	60%	62%	63%	67%
Repetition rates	13%	11%	12%	10%	9%	8%	8%	10%
Dropout rates	19%	5%	15%	26%	31%	30%	29%	22%

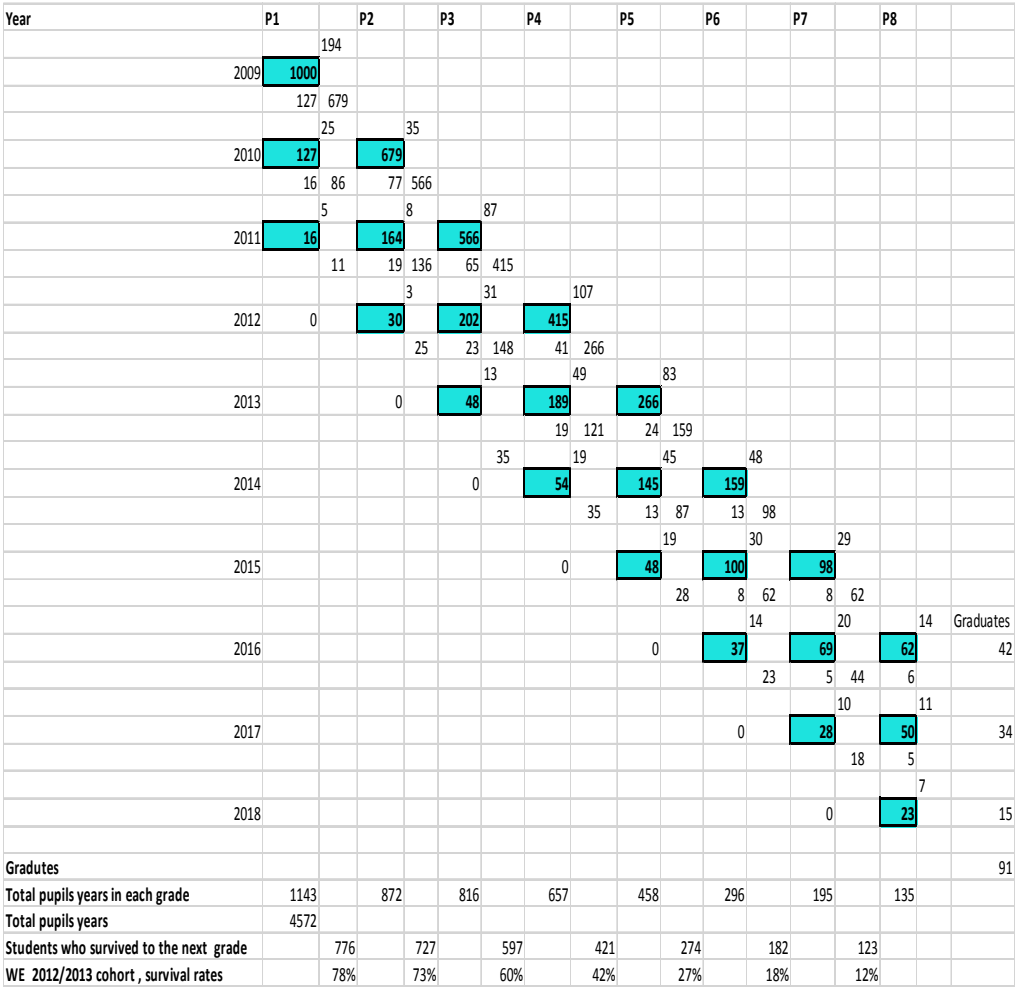


Figure 4: WE Pupil Cohort Flow for 2012/2013 at the Primary Education Level

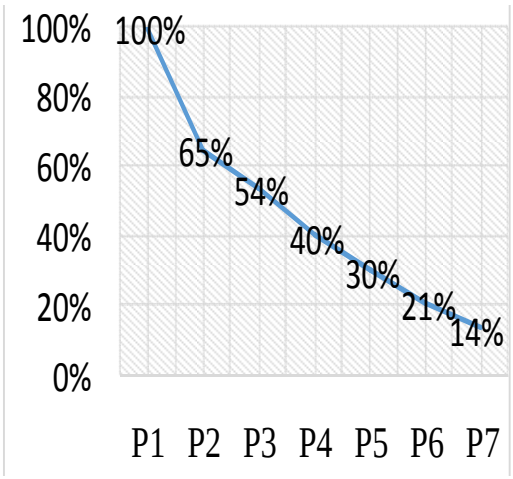
Table 4: Internal Efficiency Calculations for WE In 2012/2013 Cohort

Completion rate =91/1000*100%		9%
Ideal Pupils years	8000	
Ideal output	1000	
Ideal input/output ratio =8000/1000	8	
Actual pupils years =1143+872+816+657+458+292+195+13	4572	
Actual number of graduates =42+34+15	91	
Actual input/output ratio =4572/91	50	
Wastage ratio (WR) =50/8	6	
Internal efficiency coefficient (IEC) =1/6	17%	
Average number of years taken by a graduate =(42*8+34*9+15*10)/91		8.70
Number of wastage due to drop out		3365
Pupils years without wastage = 91* 8	728	
Pupils years wastage =4572-728	3844	
Wastage ratio (WR) due to dropout =3365/3844*100%	88%	
Wastage ratio (WR) due to repetition =100%-88%	12%	

The IEC in 2009 was lower than that of 2012. The value was 14 percent in 2009/2010 whereas 17 percent in the 2012/2013. The coefficient increased by three percent. The coefficient value implies that 2009/2010 only 14 percent of the resources were efficiently utilized while in 2012/2013, 17 percent of the resources were efficiently used. The general Wastage Ratio (WR) was high in both cases, which are 7 percent and 6 percent in 2009 and 2012 respectively. This means that Graduates were being produced at 7 and 6 percent times the ideal cost at primary school level in 2009 and 2012 respectively, these ratios are very high compared to most countries whose values range between 1.5 and 2.0 (IIE, 2014).

Comparing however to Lakes State and National levels, these figures in WES were lower. The WR values at national level were 9 and 13 percent in 2009 and 2012 respectively whereas, the values for Lakes State were 9 and 23 percent in 2009 and 2012 respectively (Dicho, 2014).

Wastage due to dropout was higher than that caused by repetition; it accounted for by 85 and 88 percent in 2009 and 2012 respectively. These figures were equally lower than those at national level and Lakes state which was 90 per cent for both levels in 2012. Between 2009 and 2013, there was as an increase in IEC of 21.4 percent in WES. The IEC of WES is higher than that of Lakes state and national level in 2012 that is 17 percent compared to 8 percent and 4 per cent for national and Lakes State.



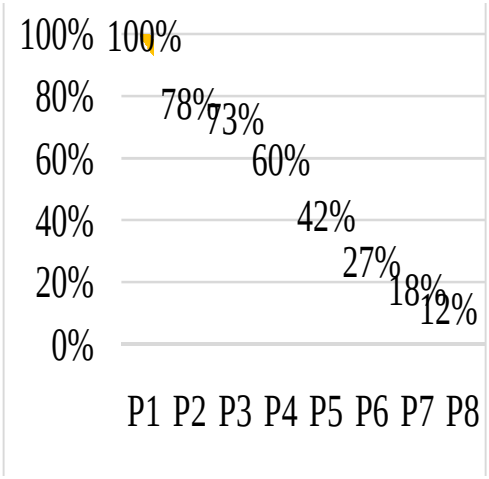


Figure 5 **Figure 6**

Figures 5 and 6: Survival Rates 2009/2010 And 2012/2013 in WE

Figure 5 and 6 explains the Survival rates (SR) in WES in 2009/2010 and 2012/2013. The SR for the cohort year 2012/2013 was higher than that of 2009/2010. In both cases, SR decreased with increase in grade levels. In 2012/2013, only 12 percent of the enrolled in grade P1 survived to the last grade P8.

Compared to the national level and Lakes State, the SR were higher than at national level and Lakes State (9% and 8 % respectively). However the values are better compare to those in the region. The SR at primary school level in Ethiopia is 47 percent in 2010 (UNESCO, 2013).

CONCLUSIONS

Based on the findings, it can be concluded that;

- There was a reduction in repetition levels in 2012/2013. The more the children repeat, the more they are likely to dropout and thus affecting the completion rates (CR).
- Just like the national level, more than half of the resources were inefficiently used in 2009 and in 2012 in WES because of high dropouts and repetition levels.
- More than half of the children enrolled in 2009 and 2012, did not complete primary education cycle, depicting the low quality of education, but also a reduction in the levels of repetition and dropout depicts some interventions line text book distribution in the state as stated in the interview with the minister of education of WES and the director of planning at the state ministry of education.

RECOMMENDATIONS

- The WES government should consider them of value and form a programme on its implementation with clear role and responsibilities of each stake holder and with clear monitoring and evaluation mechanisms or structure.
- It's also important to conduct further research to compare with other states the qualitative factors responsible for dropout and repetition in other states of the country and address them to avoid wastage of resources.

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